

DION® 9100-800

Bisphenol-A Epoxy based Vinyl Ester Resin

DESCRIPTION

DION® 9100-800 is a thixotropic and pre-accelerated Bisphenol-A epoxy based vinyl ester resin. The chemical resistance is good, particularly towards acids, alkalis and oxidizing agents. The resin offers optimum security towards blistering due to osmoses.

The outstanding adhesive properties, toughness and good mechanical properties make it suitable for production of tanks, process equipment and constructions subjected to high static and dynamic loads.

APPLICATION

The incorporated accelerator system combined with NORPOL PEROXIDE 11 or Butanox LPT minimize the foaming normally occurring when using MEKP, and gives relative short gel time and rapid curing. Recommended laminate thickness applied wet-on-wet is 2-6 mm.

DION® 9100-800 is especially formulated for hand lay-up and spray-up requirements and impregnates both glass, carbon and aramide fibres rapidly. It is easily worked and will minimize drain off, making it ideal for large, vertical applications like boat and swimming pool walls.

FEATURES

- Epoxy based vinyl ester resin
- High strength and good toughness
- Excellent hydrolytic stability
- Low viscosity
- Good curing
- Approvals

BENEFITS

- Excellent chemical resistance to a wide variety of corrosive environments
- High mechanical properties
- High elongation and good crack resistance
- Good fatigue resistance
- Very low water absorption
- Improved glass fibre wet-out
- Good final cure even with relatively long gel times
- Det norske Veritas, DNV – Grade1
- Lloyds Register of Shipping

The information herein is general information designed to assist customers in determining whether our products are suitable for their applications. Our products are intended for sale to industrial and commercial customers. We require customers to inspect and test our products before use and to satisfy themselves as to contents and suitability for their specific applications. We warrant that our products will meet our written specifications. **Nothing herein shall constitute any other warranty express or implied, including any warranty of merchantability or fitness for a particular purpose**, nor is any protection from any law or patent to be inferred. All patent rights are reserved. The exclusive remedy for all proven claims is limited to replacement of our materials and in no event shall we be liable for special, incidental or consequential damages.

TYPICAL PROPERTIES

PHYSICAL DATA IN LIQUID STATE AT 23°C

| Properties | Unit | Value | Test method |
|--|------------------------|----------------------|---------------------------------|
| Viscosity - Brookfield LVF sp. 2/12 rpm - ICI Cone & Plate | mPa s(cP) mPa s(cP) | 1000-1300 300-330 | ASTM D 2196-86 ISO 2884-1999 |
| Density | g/cm ³ | 1.02-1.06 | ISO 2811-2001 |
| Acid Value | mgKOH/g | max 9 | ISO 2114-1996 |
| Styrene Content | % weight | 46-50 | B070 |
| Flash Point | °C | 32 | ASTM D 3278-95 |
| Gel time: 2% NORPOL PEROXIDE 11 or Butanox LPT | minutes | 40-50 | G020 |
| Storage stability from date of manufacture | months | 4 | G180 |

In order to avoid foaming, you may use NORPOL Peroxide 24 or Trigonox 239 as an alternative to NORPOL Peroxide 11 or Butanox LPT.

Other brands of MEKP with high dimer content have also been used successfully. A thorough evaluation of initiator characteristics is suggested prior to fabrication.

TYPICAL CLEAR CASTING PROPERTIES AT 23°C

Fully post cured

| Properties | Unit | Value | Test method |
|-----------------------------|-------------------|-------|----------------|
| Density | g/cm ³ | 1.12 | ISO 2811-2001 |
| Tensile Strength | MPa | 80 | ISO 527-1993 |
| Tensile Modulus | MPa | 3400 | ISO 527-1993 |
| Tensile Elongation | % | 5 | ISO 527-1993 |
| Flexural Strength | MPa | 145 | ISO 178-2001 |
| Flexural Modulus | MPa | 3200 | ISO 178-2001 |
| Heat Distortion Temperature | °C | 100 | ISO 75-1993 |
| Hardness, Barcol 934-1 | - | 35 | ASTM D 2583-99 |
| Water Absorption | % | 0.55 | ISO 62-1999 |

TYPICAL LAMINATE* PROPERTIES AT 23°C

| Properties | Unit | CSM 450 | Combi mat 800/M300 | Test method |
|--------------------|------|------------|-----------------------|--------------|
| Glass Content | % | 33 | 50 | - |
| Tensile Strength | MPa | 125 | 230 | ISO 527-1993 |
| Tensile Modulus | MPa | 7800 | 14000 | ISO 527-1993 |
| Tensile Elongation | % | 2.1 | 2.1 | ISO 527-1993 |
| Flexural Strength | MPa | 200 | 350 | ISO 178-2001 |
| Flexural Modulus | MPa | 7300 | 11500 | ISO 178-2001 |

*The mechanical datas are based on 5 mm laminates made with Ahlstrom M800-450 (CSM) and Ahlstrom 9622/M300 (combi mat) respectively.

AGITATION

Thixotropic vinyl esters resins are prone to settle more than thixotropic polyester resins, and agitation of the resin prior to use is therefore recommended.

STORAGE

To ensure maximum stability and maintain optimum resin properties, resins should be stored in closed containers at temperatures below 24°C/75°F and away from heat ignition sources and sunlight. Resin should be warmed to at least 18°C/65°F prior to use in order to assure proper curing and handling. All storage areas and containers should conform to local fire and building codes. Copper or copper containing alloys should be avoided as containers. Store separate from oxidizing materials, peroxides and metal salts. Keep containers closed when not in use. Inventory levels should be kept to a reasonable minimum with first-in, first-out stock rotation.

Additional information on handling and storing unsaturated polyesters is available in Reichhold's application bulletin "Bulk Storage and Handling of Unsaturated Polyester Resins." For information on other Reichhold resins or initiators, contact your sales representative or authorized Reichhold distributor.

SAFETY**READ AND UNDERSTAND THE MATERIAL SAFETY DATA SHEET BEFORE WORKING WITH THIS PRODUCT**

Obtain a copy of the material safety data sheet on this product prior to use. Material safety data sheets are available from your Reichhold sales representative. Such information should be requested from suppliers of all products and understood prior to working with their materials.

DIRECTLY MIXING ANY ORGANIC PEROXIDE WITH A METAL SOAP, AMINE, OR OTHER POLYMERIZATION ACCELERATOR OR PROMOTER WILL RESULT IN VIOLENT DECOMPOSITION